

Appl. No. 10/809,534
Examiner: Sever, Andrew T, Art Unit 2851
In response to the Office Action dated July 14, 2005

Date: November 14, 2005
Attorney Docket No. 10113971

REMARKS

Applicant thanks the Examiner for acknowledging Applicant's claim to foreign priority and receipt of the certified copy of the priority document. Responsive to the Office Action mailed on July 14, 2005 in the above-referenced application, Applicant respectfully requests amendment of the above-identified application in the manner identified above and that the patent be granted in view of the arguments presented. No new matter has been added by this amendment.

Present Status of Application

Claims 1, 2, 4, 5, 14 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Marshall et al (US 6,406,148). Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall et al in view of Mehrl (US 2004/0169910). Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall et al in view of Roddy et al (US 6,882,356). Claims 9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall et al in view of Slobodin (US 2005/0062944). Claims 10-12 and 15-17 are objected to as being dependant upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

In this paper, claim 1 is amended to recite that the first and second micro-mirrors are rotatable. Support for this amendment can be found on page 3, line 17 to page 4, line 5 and original claims of the application. New claims 19-20 are added. Support for the new claims can be found on page 5, lines 10-22 and page 7, lines 15-29 of the application. Thus, on entry of the amendment, claims 1-20 are pending in the application.

Reconsideration of this application is respectfully requested in light of the following remarks.

Allowable Subject Matter

Applicant thanks the Examiner for his acknowledgement of allowable subject matter in claims 10-12 and 15-17.

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Rejections Under 35 U.S.C. 102(b)

Claims 1, 2, 4, 5, 14 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Marshall et al (US 6,406,148). To the extent that the grounds of the rejections may be applied to the claims now pending in this application, they are respectfully traversed.

To anticipate a claim, a reference must teach every element of the claim. In this regard, the Federal Circuit has held:

"A claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." *Verdegaal Bros. v. Union Oil Co. of California*, 814 F.2d 628, 631, 2 USPQ2d 1051, 1053 (Fed. Cir. 1987).

"The identical invention must be shown in as complete detail as is contained in the ... claim." *Richardson v. Suzuki Motor Co.*, 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989).

As amended, claim 1 recites a projector for projecting an image to a projection plate, comprising: a first digital micro-mirror device, with a first micro-mirror disposed thereon; a second digital micro-mirror device, comprising a plurality of second micro-mirrors disposed thereon; and a projection light source, emitting a projection beam toward the first digital micro-mirror device; wherein the first digital micro-mirror device reflects the projection beam from the projection light source to the second digital micro-mirror device, ***the first micro-mirror is rotatable with respect to a vertical axis to adjust a horizontal position where the projection beam is projected on the second digital micro-mirror device***, the second digital micro-mirror device reflects the projection beam from the first digital micro-mirror device to the projection plate, and ***the second micro-mirrors are rotatable with respect to a horizontal axis to adjust a vertical position where the projection beam is projected on the projection plate***.

Thus, by providing a first micro-mirror and second micro-mirrors ***rotatable relative to different axes***, the projector of the present invention can direct the projection beam to a plurality of points

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on the projection plate. As described on page 5, lines 10-22 of the specification, by the projection light source controlling the brightness and color of the projection beam, the projection beam produces a complete image after fast scanning of the entire projection plate. Namely, because the first micro-mirror is rotatable relative to a vertical axis to adjust a horizontal position where the projection beam is projected on the second micro-mirrors, and the second micro-mirrors can be rotated relative to a horizontal axis to adjust a vertical position, **different pixels can be represented at any point in both the vertical and horizontal directions across the projection plate by the projection beam.** Furthermore, by disabling the projection light source for dark pixels in the complete image, power can be saved. See page 7, lines 15-29 of the specification.

To the contrary, there is no teaching that micromirrors disposed on the digital micromirror devices (DMD) 220 and 226 disclosed by Marshall et al are rotatable relative to different axes. More specifically, DMD 220 is described as an optical shutter selectively transmitting or blocking a component beam to change the active primary color of the projected image during each bit period. Namely, light passes or it doesn't. See col. 6, lines 1-40 and Fig. 2 of Marshall et al. **There is simply no teaching of a micromirror disposed on DMD 220 rotatable with respect to a vertical axis to adjust a horizontal position where the projection beam is projected on the DMD 226.**

Furthermore, DMD 226 is described as an imaging spatial light modulator (SLM) selectively transmitting the recombined light in response to image signal from a controller 232. See column 6, lines 35-40 of Marshall et al. It is well known in the art that SLMs operate by selectively passing or scattering light according to whether micromirrors are flexed or flat. **There is simply no teaching of micromirrors disposed on DMD 226 rotatable with respect to a horizontal axis to adjust a vertical position where the projection beam is projected on Image plane 230.**

For at least the reasons described above, it is Applicant's belief that Marshall et al fail to teach or suggest all the limitations of claim 1. Applicant therefore respectfully requests that the rejection of claim 1 be withdrawn and the claim passed to issue. Insofar as claims 2-20 depend

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from claim 1 either directly or indirectly, and therefore incorporate all of the limitations of claim 1, it is Applicant's belief that these claims are also in condition for allowance.

Rejections Under 35 U.S.C. 103(a)

Claims 3 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall et al in view of Mehrl. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall et al in view of Roddy et al. Claims 9 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Marshall et al in view of Slobodin.

As noted above, it is Applicant's belief that claims 3, 6-9 and 13 are allowable by virtue of their dependency from claim 1. For this reason, the Examiner's arguments in connection with these claims are considered moot and will not be addressed here.

New Claims 19-20

As noted above, claims 19-20 are believed to be allowable by virtue of their dependency from claim 1. Applicant further submits that none of the cited art teaches or suggests a controller controlling the orientations of the first and second digital micro-mirror devices to illuminate a plurality of discrete points on the projection plate with the projection beam to produce a complete image after fast scanning the projection plate, as recited in claim 19, or that the controller disables the projection light source for dark pixels in the complete image, as recited in claim 20.

Conclusion

For the reasons described above, the Applicant believes that the application is now in condition for allowance and respectfully requests so.

Respectfully submitted,



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